United States
Department of
Agriculture

Forest Service

Pacific Northwest
Forest and Range
Experiment Station

Resource Bulletin
PNW-91

April 1981

Timber Resource Statistics for Southwest Washington

Patricia M. Bassett and Daniel D. Oswald

Abstract

Bassett, Patricia M., and Daniel D. Oswald.
1981. Timber Resource Statistics for Southwest Washington. USDA For. Serv. Resour. Bull. PNW-91, 24 p. Pacific Northwest Forest and Range Experiment Station, Portland, Oregon.

This report summarizes a 1978 timber-resource inventory of six counties in southwest Washington: Clark, Cowlitz, Lewis, Pacific, Skamania, and Wahkiakum. Detailed tables of forest area, timber volume, growth, mortality, and harvest are presented.

KEYWORDS: Forest surveys, statistics (forest), timber resources, resources (forest), southwest Washington, Washington (southwest).

Summary

The southwest Washington resource area (Clark, Cowlitz, Lewis, Pacific, Skamania, and Wahkiakum Counties) totals 4,560,000 acres (1 845 000 ha), of which an estimated 3,870,000 acres (1 566 000 ha) are forested. An estimated 3,652,000 acres (1 478 000 ha) are classified as timberland. The area has 15.8 billion cubic feet (447 million m^3) of standing timber with 55 percent of this volume in public ownership.

Preface

This report presents statistics from the latest inventory of timber resources for six counties in southwest Washington: Clark, Cowlitz, Lewis, Pacific, Skamania, and Wahkiakum. Previous inventories of these counties were made in 1931-32, 1938-40, 1949-50, and 1963.

Field data for all lands except National Forests were collected by the Renewable Resources Evaluation Work Unit of the Pacific Northwest Forest and Range Experiment Station. Renewable Resources Evaluation (formerly Forest Survey) is a nationwide project of the Forest Service authorized by the Forest and Rangeland Renewable Resources Research Act of 1978.

Forest resource inventories are conducted throughout the 50 States by the USDA Forest Service Experiment Stations. The Pacific Northwest Forest and Range Experiment Station at Portland, Oregon, is responsible for forest resource inventories in the States of Alaska, California, Hawaii, Oregon, and Washington.

National Forest inventory data included in this report are for all lands administered by the Gifford Pinchot National Forest, including the parts of the Forest that are outside the six counties mentioned and about 80,000 acres (32 000 ha) of the Snoqualmie National Forest. They were collected in 1969 by National Forest personnel and subsequently updated for land exchanges and withdrawals.

The eruption of Mount St. Helens on May 18, 1980, caused damage and destruction to thousands of acres of timberland included in this inventory report. No attempt has been made to change the tables to reflect that damage, because the eruption occurred after the inventory. We have, however, made a preliminary appraisal of the forested area damaged and the volume of timber destroyed or damaged by the May 18 eruption. The appraisal was made using posteruption aerial photography and preeruption forest inventory data.

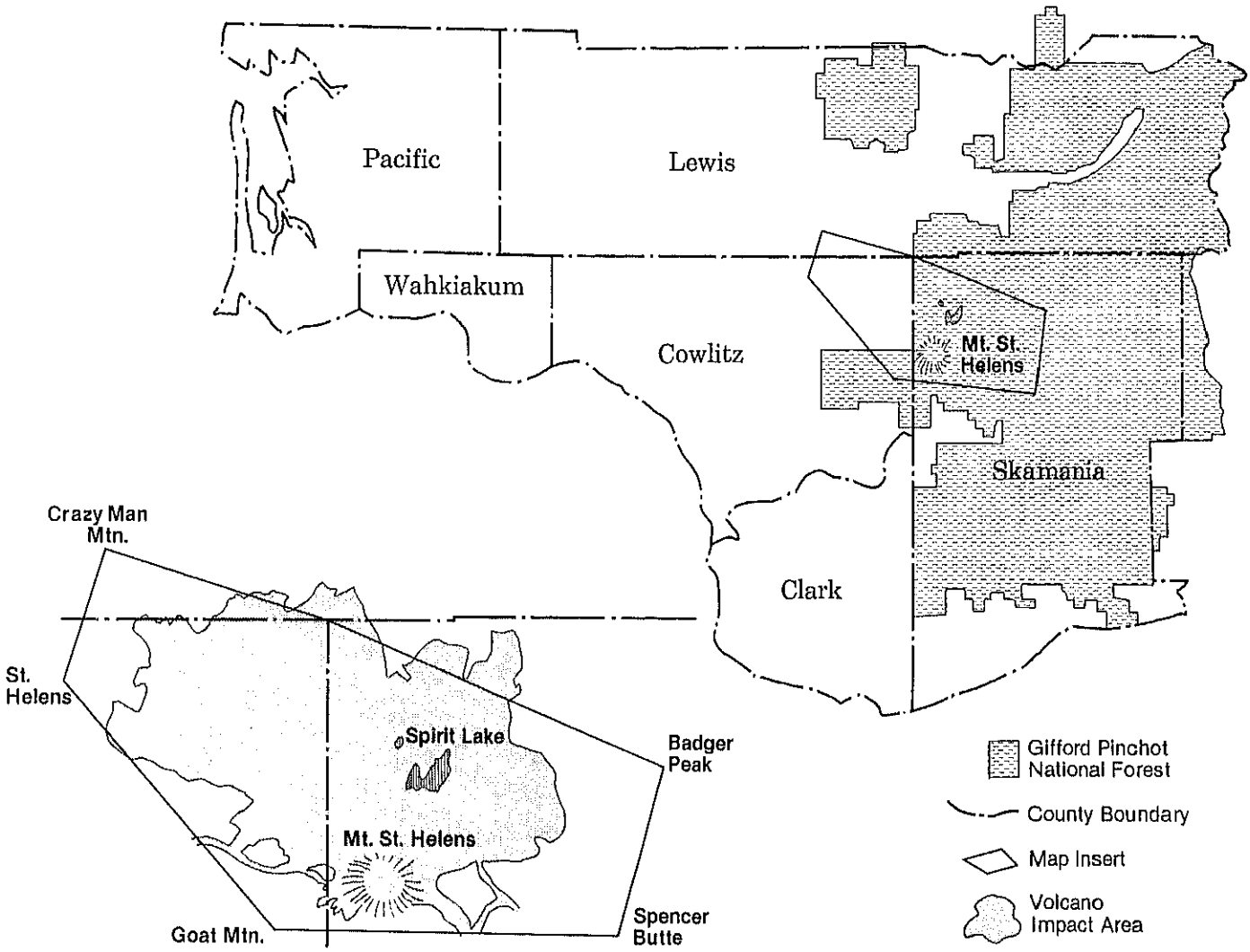
Our preliminary appraisal indicates that 125,000 acres (50 000 ha) of timberland were directly affected by blast, heat, gases, and mud or debris flows. (Areas affected solely by ashfall were not included.) Timber damaged or destroyed in this area was estimated as 2.7 billion board feet (Scribner rule). The loss of live timber, in terms of cubic volume, was 580 million cubic feet (16.4 million m^3).

Scientific names of trees (Little 1978) are listed on page 6 of this report.

Contents

Tables

Map of Southwest Washington Counties



Inventory area in southwest Washington with Mount St. Helens impact area indicated.

Inventory Procedures

This report of southwest Washington's forest resources combines inventory data from two sources: a 1969 inventory of the Gifford Pinchot National Forest updated to 1977 to account for changes in area from land exchanges and withdrawals; an inventory of State, county, municipal, Indian trust, and private forest lands conducted by the Renewable Resources Evaluation Work Unit in the summer and fall of 1978.

On the Gifford Pinchot National Forest, all areas of timberland, other forest land, reserved lands, and nonforest land were mapped by delineation on aerial photos. Timberland areas were systematically sampled with about 570 field plots, arranged in a 1.7-mile (2 736-m) square grid. The field plots, each a cluster of ten variable-radius points distributed over about 1 acre (0.4 ha), are the basis for estimates of timber volume, growth, mortality, and area attributes, such as forest type, site class, and stand size class.[1]

For all lands other than National Forest, the design used was double sampling for stratification (Cochran 1963). A total of 6,933 photo points were classified to estimate area by owner group, major land class (timberland, other forest, nonforest), and stand-volume class. We visited 439 field plots, located on a 3.4-mile (5 473-m) square grid, to correct the photo sample and to determine forest characteristics. On timberland locations, part of the 1963 10-point cluster plot was remeasured to determine growth and mortality. At the same general location, a new 5-point cluster plot, spread over about 8 acres (3 ha), was established to determine current volume, growth, and condition of the forest stand (MacLean 1980).

[1]Unpublished report, "Forest Inventory Statistics for the Gifford Pinchot National Forest (2410)," Branch of Plans and Silviculture, Division of Timber Management, Region Six, 1970, Portland, Oregon, 64 pages.

Reliability of Inventory Data

The timberland area of the Gifford Pinchot National Forest was determined from mapping and is not subject to sampling error. With that exception, all area and volume statistics reported are based on sampling and subject to sampling error. Confidence intervals (0.68 probability level) for the estimated timberland area, cubic-foot volume, and net annual cubic-foot growth by ownership class are as follows:

Owner	Timberland area	Net volume	Net annual growth
	Thousand acres	*—Million cubic feet—*	
National Forest	1,081 ± 0	6,814 ± 198	not available
Other public	427 ± 18	1,834 ± 213	74 ± 9
Forest industry	1,496 ± 23	5,092 ± 344	221 ± 13
Other private	648 ± 17	2,055 ± 185	85 ± 8
All owners	3,652 ± 25	15,795 ± 480	not available

Confidence intervals are quantitative expressions of the reliability of the timberland area, volume, and growth statistics. The above tabulation, for instance, indicates a two-in-three chance that there are between 3,627,000 and 3,677,000 acres of timberland in southwest Washington.

Confidence intervals vary with both size of the estimate and variance of the item being estimated. If variance is assumed constant, confidence bounds can be approximated for estimates of various sizes. The confidence interval guides that follow assume an average relationship between variance and the size of the estimates, and thus provide only an approximation of the reliability of individual estimates.

Timberland area	Confidence interval	
	By owner[2]	By type or class[2,3]
	Thousand acres	
1,000	±19	±57
800	±17	±52
600	±15	±45
400	±13	±38
200	±10	±28
100	± 7	±20
50	± 5	±15
25	± 4	±11
15	± 3	± 8
10	± 3	± 7

Definition of Terms

Confidence intervals	
For volume estimates of various sizes[2]	For net annual growth estimates of various sizes[2]
Million cubic feet	*Thousand cubic feet*
6,000 ± 434	200,000 ± 17,900
4,000 ± 335	100,000 ± 11,289
2,000 ± 216	50,000 ± 7,115
1,000 ± 139	25,000 ± 4,484
800 ± 120	15,000 ± 3,191
600 ± 100	10,000 ± 2,436
400 ± 77	5,000 ± 1,535
200 ± 50	1,000 ± 526
100 ± 32	500 ± 331
50 ± 21	100 ± 113
25 ± 13	
15 ± 10	
10 ± 7	
5 ± 5	

Actual confidence intervals have been calculated for most of the tabular data in this report; they are available on request.

[2]Constant variance is assumed.

[3]Applies to breakdowns of the total estimated timberland areas such as site class, stand-size class, and forest type.

Class of timber—A classification of trees as growing stock, cull, and salvable dead. Growing stock trees are subdivided into poletimber and sawtimber trees.

Codominant trees—Live trees with crowns forming the general level of the crown canopy and receiving full light from above but comparatively little from the sides; usually with medium-size crowns more or less crowded on the sides.

Commercial species—A tree species suitable for industrial wood products.

Cull trees—Live trees of noncommercial species or live trees of commercial species that are more than 75-percent defective and are unlikely to become growing stock.

Cull trees, rotten—Live trees with excessive defect primarily caused by rot.

Cull trees, sound—Live trees of noncommercial species or live trees of commercial species with excessive defect caused by poor form, roughness, etc.

Diameter class—A classification of trees based on diameter outside bark measured at breast height, 4½ feet (1.37 m) above the ground. D.I common abbreviation for "di breast height."

Dominant tr

Forest types—Stands with 50 percent or more stocking in live conifer trees are classed as softwood types. Stands with a majority of stocking in live hardwood trees are classed as hardwood types. Within these two groups, the individual forest type is determined by plurality of stocking by species of live softwood or hardwood trees.

Growing-stock trees—All live trees with the exception of cull trees.

Growing-stock volume—Net volume in cubic feet of live sawtimber and poletimber growing-stock trees from stump to a minimum 4-inch (10-cm) top (of central stem) outside bark. Net volume equals gross volume less deduction for rot and missing bole sections.

Hardwoods—Trees that are angiosperms, usually broad-leaved and often deciduous.

Industrial wood—All commercial roundwood products except fuelwood.

International ¼-inch rule—The standard board-foot log rule adopted nationally by the USDA Forest Service for the presentation of inventory-volume statistics.

Land area—Area reported as land by the Bureau of the Census. Total land area includes dry land and land temporarily or partially covered by water, such as marshes, swamps, and river flood plains; streams, sloughs, and canals less than ⅛ mile (200 m) wide; and lakes, reservoirs, and ponds less than 40 acres (16 ha) in area.

Land class—A classification of land by major use. The minimum size area for classification is 1 acre (0.4 ha).

Mean annual increment—A measure of the productivity of forest land in terms of the average increase in cubic-foot volume per acre per year. For a given species and site index the average is based on the number of years needed for the mean annual increment to culminate in fully stocked stands.

Mortality—Volume of sound wood in trees dying from natural causes during a specified period.

National Forest lands—Federal lands that have been designated by Executive order or statute as National Forest or purchase units and other lands under the administration of the Forest Service, including experimental areas and Bankhead-Jones Title III lands.

Net annual growth—The net increase in volume of trees during a specified year. Components of net annual growth of trees: (a) the increment in net volume of trees alive at the beginning of the specified year and surviving to the year's end, plus (b) the net volume of trees reaching sawtimber or poletimber size during the year, minus (c) the net volume of trees that died during the year.

Noncommercial species—A tree species not suitable for industrial wood products.

Nonforest land—Land that has never supported forests or was formerly forested and is currently developed for nonforest uses. Included are lands used for agricultural crops, improved pasture, residential areas, city parks, improved roads, operating railroads and their right-of-way clearings, powerline and pipeline clearings, streams over 30 feet (10 m) wide, and 1- to 40-acre (0.4- to 16-ha) areas of water classified by the Bureau of the Census as land. If intermingled in forest areas, unimproved roads and other nonforest strips must be more than 120 feet (35 m) wide, and clearings or other areas must be 1 acre (0.4 ha) or larger to qualify as nonforest land.

Nonstocked areas—Timberland less than 10 percent stocked with growing-stock trees.

Other forest land—Forest land incapable of producing 20 cubic feet per acre per year of industrial wood because of adverse site conditions such as sterile soil, dry climate, poor drainage, high elevation, steepness, or rockiness.

Other private lands—All privately owned lands except those classed as forest-industry lands.

Other private lands, farmer—Lands owned by operators of farms.

Other private lands, miscellaneous—Privately owned lands other than those owned by the forest industry or farmers.

Other public lands—Lands administered by public agencies other than the Forest Service.

Poletimber stands—Stands with a mean diameter (weighted by basal area) from 5.0 inches (12.5 cm) to 9.0 inches (22.5 cm) if softwood and from 5.0 inches (12.5 cm) to 11.0 inches (27.5 cm) if hardwood.

Poletimber trees—Live trees of commercial species at least 5.0 inches (12.5 cm) in diameter at breast height but smaller than sawtimber size, and of good form and vigor.

Roundwood—Logs, bolts, or other round sections cut from trees.

Salvable dead trees—Standing or down trees of commercial species, at least 9.0 inches (22.5 cm) in d.b.h. for softwoods and at least 11.0 inches (27.5 cm) in d.b.h. for hardwoods, containing 25 percent or more sound-wood volume and at least one merchantable 12-foot (3.8-m) log if softwood or one merchantable 8-foot (2.5-m) log if hardwood.

Sapling and seedling stands—Stands with a mean diameter (weighted by basal area) less than 5.0 inches (12.5 cm).

Sapling and seedling trees—Live trees of commercial species less than 5 inches (12.5 cm) in d.b.h. with no disease, defects, or deformities likely to prevent their becoming poletimber trees.

Saw-log portion—The bole of sawtimber trees between the stump and the saw-log top.

Sawtimber stands—Stands with a mean diameter (weighted by basal area) larger than 9.0 inches (22.5 cm) if softwood and larger than 11.0 inches (27.5 cm) if hardwood.

Sawtimber trees—Live softwood trees of commercial species at least 9.0 inches (22.5 cm) in d.b.h. and hardwood trees of commercial species at least 11.0 inches (27.5 cm) in d.b.h. At least 25 percent of the board-foot volume in a sawtimber tree must be free from defect. Softwood trees must contain at least one 12-foot (3.8-m) saw log with a top diameter of not less than 6 inches (15 cm) inside the bark; hardwood trees must contain at least one 8-foot (2.5-m) saw log with a top diameter of not less than 8 inches (20 cm) inside the bark.

Sawtimber volume—Net volume of sawtimber trees measured in board feet. Net volume equals gross volume less deduction for rot, sweep, crook, and other defects that affect use for lumber.

Scribner rule—The common board-foot log rule used locally in determining volume of sawtimber. Scribner volume is estimated in terms of 32-foot (10-m) logs for softwoods and 16-foot (5-m) logs for hardwoods.

Site class—A classification of the potential productivity of forest land in terms of mean annual increment.

Site index—A measure of the productivity of forest land in terms of the average height of dominant and codominant trees at a specified age.

Softwoods—Coniferous trees, usually evergreen.

Timber harvest—Volume of roundwood removed from forest land for products.

Timber volume—Includes the net volume in cubic feet of poletimber and sawtimber trees and salvable dead sawtimber trees of all species, the net volume in cubic feet of cull trees of commercial species, and gross volume of noncommercial species. Volume is measured from stump to a minimum 4-inch (10-cm) top outside bark.

Timberland—Forest land capable of producing 20 cubic feet per acre (1.4 m^3/ha) per year of industrial wood.

Timberland, deferred—National Forest timberland temporarily withdrawn from timber utilization and under study for possible inclusion in the wilderness system.

Timberland, reserved—Public land withdrawn from timber utilization through statute, ordinance, or administrative order but which otherwise qualifies as timberland.

Timberland, unreserved—Timberland not withdrawn from timber utilization.

Upper-stem portion—The bole of sawtimber trees above the saw-log top—7.0 inches (18 cm) outside bark for softwoods and 9.0 inches (23 cm) outside bark for hardwoods—to a minimum top diameter of 4.0 inches (10 cm) outside bark, or to the point where the central stem breaks into limbs.

Acknowledgments

The Washington Department of Natural Resources, a cooperator, prepared maps and aerial photos for use in this inventory and developed equations for estimation of tree volumes; county assessors provided ownership information; the Pacific Northwest Region, USDA Forest Service, and the Gifford Pinchot National Forest provided forest-resource inventory data; and timber companies and many individual landowners allowed access to their forest lands.

Names of Trees

Common name	Scientific name
	Softwoods
Alaska-cedar	*Chamaecyparis nootkatensis* (D. Don) Spach
Douglas-fir	*Pseudotsuga menziesii* (Mirb.) Franco
Fir, grand	*Abies grandis* (Dougl. ex D. Don) Lindl.
Fir, noble	*A. procera* Rehd.
Fir, Pacific silver	*A. amabilis* Dougl. ex Forbes
Fir, subalpine	*A. lasiocarpa* (Hook.) Nutt.
Fir, white	*A. concolor* (Gord. & Glend.) Lindl. ex Hildebr.
Hemlock, mountain	*Tsuga mertensiana* (Bong.) Carr.
Hemlock, western	*T. heterophylla* (Raf.) Sarg.
Larch, western	*Larix occidentalis* Nutt.
Pine, lodgepole	*Pinus contorta* Dougl. ex Loud. var. *latifolia* Engelm.
Pine, ponderosa	*P. ponderosa* Dougl. ex Laws.
Pine, western white	*P. monticola* Dougl. ex D. Don
Pine, whitebark	*P. albicaulis* Engelm.
Redcedar, western	*Thuja plicata* Donn ex. D. Don
Spruce, Engelmann	*Picea engelmannii* Parry ex Engelm.
Spruce, Sitka	*P. sitchensis* (Bong.) Carr.
	Hardwoods
Alder, red	*Alnus rubra* Bong.
Ash, Oregon	*Fraxinus latifolia* Benth.
Aspen, quaking	*Populus tremuloides* Michx.
Cottonwood, black	*P. trichocarpa* Torr. & Gray
Maple, bigleaf	*Acer macrophyllum* Pursh
Oak, Oregon white	*Quercus garryana* Dougl. ex Hook.
Willow	*Salix* spp.

Metric Equivalents

1,000 acres = 404.7 hectares
1,000 cubic feet = 28.3 cubic meters
1 cubic foot per acre = 0.07 cubic meters per hectare
1 foot = 30.48 centimeters
1 inch = 2.54 centimeters
1 mile = 1 609.3 meters

Literature Cited

Cochran, W. G.
1963. Sampling techniques. 2nd ed., 413 p. John Wiley & Sons, Inc., New York.

Little, E. L., Jr.
1978. Checklist of United States trees (native and naturalized). U. S. Dep. Agric. Agric. Handb. 541, 375 p. Washington, D.C.

MacLean, C. D.
1980. A technique for identifying treatment opportunities from western Oregon and Washington forest survey plots. USDA For. Serv. Gen. Tech. Rep. PNW-102, 16 p. Pac. Northwest For. and Range Exp. Stn., Portland, Oreg.

Appendix

TABLE 1—AREA BY LAND CLASS AND COUNTY, SOUTHWEST WASHINGTON, JANUARY 1, 1979[1/]

LAND CLASS	CLARK	COWLITZ	LEWIS	PACIFIC	SKAMANIA	WAHKIAKUM	OTHER COUNTIES 2/	ALL COUNTIES
				THOUSAND HECTARES				
FOREST LAND:								
TIMBERLAND--								
UNRESERVED	91	255	485	202	370	57	17	1 478
DEFERRED	--	--	3	--	6	--	--	10
RESERVED	1	3/	23	1	4	--	1	30
OTHER FOREST	2	2	21	5	16	1	2	49
TOTAL	94	257	532	208	397	58	19	1 566
NONFOREST LAND 4/	68	38	97	27	36	9	4	279
ALL LANDS 5/	162	295	629	235	433	68	23	1 845
				THOUSAND ACRES				
FOREST LAND:								
TIMBERLAND--								
UNRESERVED	225	630	1,199	500	915	142	41	3,652
DEFERRED	--	--	8	--	16	--	--	24
RESERVED	2	3/	57	2	11	--	2	74
OTHER FOREST	5	4	51	13	40	2	5	120
TOTAL	232	634	1,315	515	982	144	48	3,870
NONFOREST LAND 4/	169	95	239	66	88	23	9	689
ALL LANDS 5/	401	730	1,554	581	1,070	167	57	4,560

1/Totals may be off because of rounding.

2/Includes Gifford Pinchot National Forest land in Klickitat, Yakima, Pierce, and Thurston Counties. For National Forest, the areas by county by land class are approximations based on type maps and previous inventories.

3/Less than 500 acres (202 ha).

4/Includes cropland, pasture and range, swampland, industrial and urban areas, powerline clearings, railroads, and all improved roads and highways, and water as classified by Renewable Resources Evaluation standards but defined by the Bureau of the Census as land.

5/Source: United States Bureau of the Census, Land and Water Area of the United States, 1960.

TABLE 2—AREA OF TIMBERLAND BY OWNERSHIP CLASS AND COUNTY, SOUTHWEST WASHINGTON, JANUARY 1, 1979[1/]

OWNERSHIP CLASS	CLARK	COWLITZ	LEWIS	PACIFIC	SKAMANIA	WAHKIAKUM	OTHER COUNTIES [2/]	ALL COUNTIES
				THOUSAND ACRES				
PUBLIC:								
NATIONAL FOREST [3/]	1	20	326	--	693	--	41	1,081
OTHER PUBLIC	49	75	114	73	81	34	--	427
TOTAL	50	95	440	73	774	34	41	1,507
PRIVATE:								
FOREST INDUSTRY	52	424	486	355	89	90	--	1,495
OTHER PRIVATE--								
FARMER	35	28	66	26	13	4	--	172
MISCELLANEOUS	88	83	208	46	39	13	--	476
TOTAL	175	535	759	427	141	107	--	2,144
ALL OWNERSHIPS	225	630	1,199	500	915	142	41	3,652

[1/] Totals may be off because of rounding.

[2/] Includes Gifford Pinchot National Forest land in Klickitat, Yakima, Pierce, and Thurston Counties.

[3/] For National Forests, the areas by county are approximations based on type maps and previous inventories.

TABLE 3—AREA OF TIMBERLAND BY CUBIC-FOOT SITE AND OWNERSHIP CLASSES, SOUTHWEST WASHINGTON, JANUARY 1, 1979[1/]

SITE CLASS [2/]	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
CUBIC FEET	- - - - - - - - - - - - - - -	THOUSAND ACRES			- - - - - - - - - - - - -
225 OR MORE	--	59	309	36	404
165 TO 224	82	121	593	201	997
120 TO 164	212	189	345	200	946
85 TO 119	250	45	145	119	559
50 TO 84	470	13	95	83	661
20 TO 49	67	--	8	10	85
ALL CLASSES	1,081	427	1,495	648	3,652

[1/] Totals may be off because of rounding.

[2/] Capacity for cubic-foot annual growth per acre at culmination of mean annual growth in fully stocked natural stands.

TABLE 4—AREA OF TIMBERLAND BY STAND-SIZE AND OWNERSHIP CLASSES, SOUTHWEST WASHINGTON, JANUARY 1, 1979[1/]

STAND-SIZE CLASS	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			THOUSAND HECTARES		
SAWTIMBER STANDS:					
LARGE SAWTIMBER 2/	262	13	33	23	331
SMALL SAWTIMBER 3/	66	74	234	120	494
TOTAL	328	87	267	144	826
POLETIMBER STANDS	28	51	99	62	240
SAPLING AND SEEDLING STANDS	57	30	213	44	344
NONSTOCKED AREAS	25	5	26	13	68
ALL CLASSES	438	173	605	262	1 478
			THOUSAND ACRES		
SAWTIMBER STANDS:					
LARGE SAWTIMBER 4/	648	31	81	58	819
SMALL SAWTIMBER 5/	162	184	578	297	1,221
TOTAL	810	215	659	355	2,040
POLETIMBER STANDS	69	125	246	152	592
SAPLING AND SEEDLING STANDS	140	75	527	109	851
NONSTOCKED AREAS	62	13	63	31	169
ALL CLASSES	1,081	427	1,495	648	3,652

1/Totals may be off because of rounding.

2/On National Forests, large sawtimber includes stands 100 years or older. On other ownerships, large sawtimber includes trees 52.5-centimeter d.b.h. and larger.

3/On National Forests, small sawtimber includes stands less than 100 years old. On other ownerships, small sawtimber includes softwood trees 22.5- to 52.4-centimeter d.b.h. and hardwood trees 27.5- to 52.4-centimeter d.b.h.

4/On National Forests, large sawtimber includes stands 100 years or older. On other ownerships, large sawtimber includes trees 21.0-inch d.b.h. and larger.

5/On National Forests, small sawtimber includes stands less than 100 years old. On other ownerships, small sawtimber includes softwood trees 9.0- to 20.9-inch d.b.h. and hardwood trees 11.0- to 20.9-inch d.b.h.

TABLE 5—AREA OF TIMBERLAND BY FOREST TYPE AND OWNERSHIP CLASS, SOUTHWEST WASHINGTON, JANUARY 1, 1979[1/]

FOREST TYPE	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			THOUSAND ACRES		
DOUGLAS-FIR	529	224	703	245	1,701
WESTERN HEMLOCK	171	78	413	86	748
PACIFIC SILVER FIR	198	--	27	--	225
LODGEPOLE PINE	25	--	--	--	25
GRAND FIR	17	6	--	--	23
WESTERN REDCEDAR	9	--	5	8	22
MOUNTAIN HEMLOCK	13	--	7	--	20
NOBLE FIR	19	--	--	--	19
SUBALPINE FIR	11	--	--	--	11
SITKA SPRUCE	--	--	11	--	11
WESTERN WHITE PINE	7	--	--	--	7
PONDEROSA PINE	4	--	--	--	4
ENGELMANN SPRUCE	4	--	--	--	4
RED ALDER	6	107	235	202	550
MAPLE	2	--	16	43	61
COTTONWOOD	--	--	15	11	26
OREGON WHITE OAK	2	--	--	--	2
OTHER HARDWOODS	--	--	--	23	23
NONCOMMERCIAL HARDWOODS	2	--	--	--	2
UNCLASSIFIED 2/	62	13	63	31	169
TYPES	1,081	427	1,495	648	3,652

may be off because of rounding.

ified type is less than 10 percent stocked with live trees.

TABLE 6—AREA OF RESERVED AND DEFERRED TIMBERLAND AND OTHER FOREST LAND BY LAND CLASS, FOREST TYPE, AND OWNERSHIP CLASS, SOUTHWEST WASHINGTON, JANUARY 1, 1979[1/2/]

(THOUSAND ACRES)

LAND CLASS AND FOREST TYPE	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			RESERVED		
TIMBERLAND:					
DOUGLAS-FIR	3	20	--	--	23
TRUE FIRS	34	6	--	--	40
WHITEBARK PINE	--	3	--	--	3
LODGEPOLE PINE	--	3/	--	--	3/
HEMLOCK	6	1	--	--	7
SITKA SPRUCE	--	1	--	--	1
HARDWOODS	--	3/	--	--	3/
TOTAL	43	31	--	--	74
OTHER FOREST:					
UNCLASSIFIED 4/	37	13	--	--	50
ALL RESERVED	80	44	--	--	124
			DEFERRED		
TIMBERLAND:					
TRUE FIRS	24	--	--	--	24
ALL DEFERRED	24	--	--	--	24
			UNRESERVED		
OTHER FOREST:					
DOUGLAS-FIR	17	--	--	--	17
TRUE FIRS	7	--	--	--	7
HEMLOCK	5	--	--	--	5
WILLOW	--	11	13	--	24
UNCLASSIFIED 4/	3	6	8	--	17
ALL UNRESERVED	32	17	21	--	70

1/ Totals may be off because of rounding.

2/ Area of timberland (unreserved) by forest type and ownership class is presented in table 5.

3/ Less than 500 acres.

4/ Information on forest type not available.

TABLE 7—VOLUME OF TIMBER ON TIMBERLAND BY CLASS OF TIMBER AND BY SOFTWOODS AND HARDWOODS, SOUTHWEST WASHINGTON, JANUARY 1, 1979[1/]

CLASS OF TIMBER	SOFTWOODS	HARDWOODS	ALL SPECIES
		MILLION CUBIC FEET	
SAWTIMBER TREES:			
SAW-LOG PORTION	12,753	941	13,693
UPPER-STEM PORTION	390	143	534
TOTAL	13,143	1,085	14,228
POLETIMBER TREES	950	618	1,568
ALL GROWING STOCK	14,093	1,702	15,795
SOUND CULL TREES	36	87	123
ROTTEN CULL TREES	310	17	328
SALVABLE DEAD TREES	319	3	322
ALL TIMBER	14,758	1,810	16,568

1/ Totals may be off because of rounding.

TABLE 8—VOLUME OF GROWING STOCK AND SAWTIMBER ON TIMBERLAND BY OWNERSHIP CLASS AND BY SOFTWOODS AND HARDWOODS, SOUTHWEST WASHINGTON, JANUARY 1, 1979[1/]

OWNERSHIP CLASS	AVERAGE VOLUME	SOFTWOODS	HARDWOODS	ALL SPECIES
	CUBIC METERS PER HECTARE	MILLION CUBIC METERS		
GROWING STOCK: 2/				
NATIONAL FOREST	441	192	1	193
OTHER PUBLIC	301	45	7	52
FOREST INDUSTRY	238	122	22	144
OTHER PRIVATE	221	41	17	58
ALL OWNERSHIPS	302	399	48	447
	CUBIC FEET PER ACRE	MILLION CUBIC FEET		
GROWING STOCK: 3/				
NATIONAL FOREST	6,303	6,780	34	6,814
OTHER PUBLIC	4,297	1,576	259	1,835
FOREST INDUSTRY	3,406	4,297	795	5,092
OTHER PRIVATE	3,170	1,442	614	2,054
ALL OWNERSHIPS	4,325	14,093	1,702	15,795
	BOARD FEET PER ACRE	MILLION BOARD FEET		
SAWTIMBER (INTERNATIONAL 1/4-INCH RULE): 4/				
NATIONAL FOREST	37,029	39,838	190	40,028
OTHER PUBLIC	22,473	8,702	894	9,596
FOREST INDUSTRY	17,822	23,724	2,920	26,644
OTHER PRIVATE	15,910	8,350	1,960	10,310
ALL OWNERSHIPS	23,707	80,614	5,965	86,579
SAWTIMBER (SCRIBNER RULE): 4/				
NATIONAL FOREST	28,747	30,943	133	31,076
OTHER PUBLIC	16,443	6,276	745	7,021
FOREST INDUSTRY	13,105	17,157	2,436	19,592
OTHER PRIVATE	11,861	6,035	1,652	7,686
ALL OWNERSHIPS	17,901	60,411	4,965	65,376

1/ Totals may be off because of rounding.

2/ Includes trees 12.5-centimeter d.b.h. and larger.

3/ Includes trees 5.0-inch d.b.h. and larger.

4/ Includes softwood trees 9.0-inch d.b.h. and larger and hardwood trees 11.0-inch d.b.h. and larger.

TABLE 9—VOLUME OF GROWING STOCK AND SAWTIMBER ON TIMBERLAND BY COUNTY AND OWNERSHIP CLASS, SOUTHWEST WASHINGTON, JANUARY 1, 1979[1]

COUNTY	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			MILLION CUBIC METERS		
GROWING STOCK: [2]					
CLARK	[3]	6	5	10	21
COWLITZ	3	10	43	10	65
LEWIS	64	14	48	25	151
PACIFIC	--	7	30	6	42
SKAMANIA	118	10	9	5	142
WAHKIAKUM	--	5	9	2	17
OTHER COUNTIES [4]	8	--	--	--	8
ALL COUNTIES	193	52	144	58	447
			MILLION CUBIC FEET		
GROWING STOCK: [5]					
CLARK	7	209	175	362	753
COWLITZ	106	337	1,507	358	2,308
LEWIS	2,249	509	1,709	880	5,347
PACIFIC	--	250	1,044	205	1,499
SKAMANIA	4,152	346	323	180	5,001
WAHKIAKUM	--	183	335	69	587
OTHER COUNTIES [4]	300	--	--	--	300
ALL COUNTIES	6,814	1,835	5,092	2,054	15,795
			MILLION BOARD FEET		
SAWTIMBER (INTERNATIONAL 1/4-INCH RULE): [6]					
CLARK	37	1,076	889	1,789	3,791
COWLITZ	741	1,791	8,061	1,826	12,419
LEWIS	12,071	2,675	8,982	4,532	28,260
PACIFIC	--	1,236	5,224	883	7,343
SKAMANIA	25,661	1,803	1,694	909	30,067
WAHKIAKUM	--	1,014	1,794	371	3,179
OTHER COUNTIES [4]	1,518	--	--	--	1,518
ALL COUNTIES	40,028	9,596	26,644	10,310	86,579
SAWTIMBER (SCRIBNER RULE): [6]					
CLARK	33	787	647	1,325	2,792
COWLITZ	483	1,313	5,936	1,357	9,089
LEWIS	10,257	1,955	6,604	3,387	22,203
PACIFIC	--	902	3,831	651	5,384
SKAMANIA	18,935	1,316	1,250	685	22,186
WAHKIAKUM	--	749	1,324	281	2,354
OTHER COUNTIES [4]	1,368	--	--	--	1,368
ALL COUNTIES	31,076	7,021	19,592	7,686	65,376

[1] Totals may be off because of rounding.

[2] Includes trees 12.5-centimeter d.b.h. and larger.

[3] Less than 500 000 cubic meters.

[4] Klickitat, Yakima, Pierce, and Thurston Counties.

[5] Includes trees 5.0-inch d.b.h. and larger.

[6] Includes softwood trees 9.0-inch d.b.h. and larger and hardwood trees 11.0-inch d.b.h. and larger.

TABLE 10—VOLUME OF GROWING STOCK ON TIMBERLAND BY SPECIES AND OWNERSHIP CLASS, SOUTHWEST WASHINGTON, JANUARY 1, 1979[1]

SPECIES	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			MILLION CUBIC FEET		
SOFTWOODS:					
DOUGLAS-FIR	3,126	1,220	2,084	840	7,271
WESTERN HEMLOCK	1,285	308	1,770	348	3,710
PACIFIC SILVER FIR	1,387	--	58	55	1,499
WESTERN REDCEDAR	240	29	156	118	542
NOBLE FIR	203	5	35	42	284
MOUNTAIN HEMLOCK	159	--	74	--	233
GRAND FIR	119	10	17	20	165
SITKA SPRUCE	--	4	105	17	126
SUBALPINE FIR	66	--	--	--	66
WESTERN WHITE PINE	58	--	--	2	60
LODGEPOLE PINE	47	--	--	--	47
PONDEROSA PINE	33	--	--	--	33
ENGELMANN SPRUCE	29	--	--	--	29
WESTERN LARCH	11	--	--	--	11
ALASKA-CEDAR	10	--	--	--	10
WHITE FIR	7	--	--	--	7
TOTAL	6,780	1,576	4,297	1,442	14,093
HARDWOODS:					
RED ALDER	20	236	650	411	1,318
BIGLEAF MAPLE	9	23	100	151	283
BLACK COTTONWOOD	5	--	41	24	69
OREGON ASH	--	--	4	27	31
OREGON WHITE OAK	--	--	--	1	1
QUAKING ASPEN	2/	--	--	--	2/
TOTAL	34	259	795	614	1,702
ALL SPECIES	6,814	1,835	5,092	2,054	15,795

1/ Totals may be off because of rounding.

2/ Less than 500,000 cubic feet.

TABLE 11—VOLUME OF SAWTIMBER, INTERNATIONAL ¼-INCH RULE, ON TIMBERLAND BY SPECIES AND OWNERSHIP CLASS, SOUTHWEST WASHINGTON, JANUARY 1, 1979[1]

SPECIES	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			MILLION BOARD FEET		
SOFTWOODS:					
DOUGLAS-FIR	19,608	7,130	11,764	4,893	43,396
WESTERN HEMLOCK	7,161	1,354	9,441	1,964	19,920
PACIFIC SILVER FIR	7,805	--	300	343	8,448
WESTERN REDCEDAR	1,280	141	818	667	2,907
NOBLE FIR	1,295	29	213	261	1,798
MOUNTAIN HEMLOCK	836	--	483	--	1,319
GRAND FIR	614	41	81	113	849
SITKA SPRUCE	--	7	624	93	723
SUBALPINE FIR	280	--	--	--	280
WESTERN WHITE PINE	332	--	--	16	348
LODGEPOLE PINE	141	--	--	--	141
PONDEROSA PINE	187	--	--	--	187
ENGELMANN SPRUCE	159	--	--	--	159
WESTERN LARCH	66	--	--	--	66
ALASKA-CEDAR	43	--	--	--	43
WHITE FIR	31	--	--	--	31
TOTAL	39,838	8,702	23,724	8,350	80,614
...S:					
...ER	106	821	2,437	1,015	4,379
...MAPLE	33	73	286	693	1,085
...TTONWOOD	49	--	173	150	372
...SH	--	--	24	99	123
...ITE OAK	--	--	--	5	5
...SPEN	2	--	--	--	2
	190	894	2,920	1,960	5,965
...S	40,028	9,596	26,644	10,310	86,579

...ay be off because of rounding.

TABLE 12—VOLUME OF SAWTIMBER, SCRIBNER RULE, ON TIMBERLAND BY SPECIES AND OWNERSHIP CLASS, SOUTHWEST WASHINGTON, JANUARY 1, 1979[1]

SPECIES	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			MILLION BOARD FEET		
SOFTWOODS:					
DOUGLAS-FIR	15,348	5,235	8,383	3,490	32,457
WESTERN HEMLOCK	5,603	903	6,895	1,452	14,853
PACIFIC SILVER FIR	5,930	--	201	271	6,401
WESTERN REDCEDAR	1,022	85	554	448	2,108
NOBLE FIR	1,039	21	184	216	1,460
MOUNTAIN HEMLOCK	637	--	395	--	1,032
GRAND FIR	443	30	52	83	609
SITKA SPRUCE	--	3	493	60	557
SUBALPINE FIR	196	--	--	--	196
WESTERN WHITE PINE	253	--	--	13	266
LODGEPOLE PINE	95	--	--	--	95
PONDEROSA PINE	150	--	--	--	150
ENGELMANN SPRUCE	118	--	--	--	118
WESTERN LARCH	56	--	--	--	56
ALASKA-CEDAR	30	--	--	--	30
WHITE FIR	23	--	--	--	23
TOTAL	30,943	6,276	17,157	6,035	60,411
HARDWOODS:					
RED ALDER	71	684	2,028	836	3,620
BIGLEAF MAPLE	22	61	236	592	910
BLACK COTTONWOOD	38	--	152	135	324
OREGON ASH	--	--	21	84	105
OREGON WHITE OAK	--	--	--	4	4
QUAKING ASPEN	2	--	--	--	2
TOTAL	133	745	2,436	1,652	4,965
ALL SPECIES	31,076	7,021	19,592	7,686	

1/Totals may be off because of rounding.

TABLE 13—VOLUME OF GROWING STOCK ON TIMBERLAND BY SPECIES AND DIAMETER CLASS, SOUTHWEST WASHINGTON, JANUARY 1, 1979[1]

SPECIES	DIAMETER CLASS (INCHES AT BREAST HEIGHT)										
	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 AND LARGER	ALL CLASSES
	MILLION CUBIC FEET										
SOFTWOODS:											
DOUGLAS-FIR	140	232	326	479	575	655	647	552	1,719	1,946	7,271
WESTERN HEMLOCK	136	237	307	292	336	319	289	250	663	882	3,710
PACIFIC SILVER FIR	30	57	84	105	90	117	120	118	417	361	1,499
WESTERN REDCEDAR	12	22	29	31	23	25	26	35	108	231	542
NOBLE FIR	3	7	3	6	12	8	11	16	76	144	284
MOUNTAIN HEMLOCK	3	8	6	8	13	14	14	13	51	103	233
GRAND FIR	11	10	13	16	11	22	16	12	35	21	165
SITKA SPRUCE	2	6	7	4	7	3	3	4	13	77	126
SUBALPINE FIR	4	6	7	12	10	7	8	1	8	3	66
WESTERN WHITE PINE	2	3	4	5	4	4	4	2	12	21	60
LODGEPOLE PINE	7	8	6	8	4	6	5	2	2	--	47
PONDEROSA PINE	2	1	1	2	2	1	--	1	7	17	33
ENGELMANN SPRUCE	1	1	2	1	1	4	3	4	8	3	29
WESTERN LARCH	--	--	--	--	--	--	1	--	7	3	11
ALASKA-CEDAR	1	1	1	1	--	--	1	1	1	3	10
WHITE FIR	1	1	--	--	1	--	1	1	2	--	7
TOTAL	354	600	795	970	1,090	1,185	1,148	1,012	3,129	3,813	14,093
HARDWOODS:											
RED ALDER	100	170	239	281	188	154	96	35	52	2	1,318
BIGLEAF MAPLE	12	36	39	33	46	28	17	17	39	17	283
BLACK COTTONWOOD	3	1	8	3	1	2	6	8	26	11	69
OREGON ASH	1	6	2	1	6	3	6	3	3	--	31
OREGON WHITE OAK	--	--	--	--	--	--	--	1	--	--	1
QUAKING ASPEN	--	--	--	2/	--	--	--	--	--	--	2/
L	116	213	288	318	242	187	124	64	119	30	1,702
"	470	814	1,083	1,288	1,332	1,371	1,272	1,075	3,248	3,845	15,795

f because of rounding.

0 cubic feet.

TABLE 14—VOLUME OF SAWTIMBER, INTERNATIONAL ¼-INCH RULE, ON TIMBERLAND BY SPECIES AND DIAMETER CLASS, SOUTHWEST WASHINGTON, JANUARY 1, 1979[1/]

SPECIES	DIAMETER CLASS (INCHES AT BREAST HEIGHT)								
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 AND LARGER	ALL CLASSES
	MILLION BOARD FEET								
SOFTWOODS:									
DOUGLAS-FIR	1,481	2,501	3,280	3,973	4,030	3,527	11,280	13,324	43,396
WESTERN HEMLOCK	1,426	1,497	1,909	1,874	1,795	1,510	4,134	5,773	19,920
PACIFIC SILVER FIR	384	500	519	662	702	733	2,580	2,367	8,448
WESTERN REDCEDAR	116	141	115	134	142	202	636	1,421	2,907
NOBLE FIR	12	25	58	46	57	92	487	1,022	1,798
MOUNTAIN HEMLOCK	29	43	58	70	72	72	310	664	1,319
GRAND FIR	60	74	53	126	96	74	228	138	849
SITKA SPRUCE	32	17	36	16	17	29	79	497	723
SUBALPINE FIR	33	49	49	34	42	7	47	19	280
WESTERN WHITE PINE	14	21	21	24	21	11	82	154	348
LODGEPOLE PINE	22	30	17	29	24	11	8	--	141
PONDEROSA PINE	1	7	8	3	2	7	43	115	187
ENGELMANN SPRUCE	8	5	4	21	20	25	53	23	159
WESTERN LARCH	2	--	--	--	3	--	46	15	66
ALASKA-CEDAR	4	5	2	--	5	3	7	18	43
WHITE FIR	--	--	5	--	3	8	15	--	31
TOTAL	3,624	4,915	6,134	7,014	7,031	6,311	20,034	25,550	80,614
HARDWOODS:									
RED ALDER	--	1,327	1,043	898	569	211	318	14	4,379
BIGLEAF MAPLE	--	158	250	161	95	102	219	101	1,085
BLACK COTTONWOOD	--	14	8	10	39	55	168	78	372
OREGON ASH	--	6	32	18	34	16	18	--	123
OREGON WHITE OAK	--	--	--	--	--	5	--	--	5
QUAKING ASPEN	--	2	--	--	--	--	--	--	2
TOTAL	--	1,508	1,333	1,086	737	389	723	191	5,965
ALL SPECIES	3,624	6,423	7,467	8,099	7,768	6,700	20,757	25,742	86,579

1/ Totals may be off because of rounding.

TABLE 15—VOLUME OF SAWTIMBER, SCRIBNER RULE, ON TIMBERLAND BY SPECIES AND DIAMETER CLASS, SOUTHWEST WASHINGTON, JANUARY 1, 1979[1]

SPECIES	DIAMETER CLASS (INCHES AT BREAST HEIGHT)								
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 AND LARGER	ALL CLASSES
	MILLION BOARD FEET								
SOFTWOODS:									
DOUGLAS-FIR	880	1,572	2,151	2,727	2,848	2,575	8,585	11,118	32,457
WESTERN HEMLOCK	851	956	1,292	1,307	1,305	1,117	3,213	4,811	14,853
PACIFIC SILVER FIR	239	317	342	453	498	542	2,014	1,996	6,401
WESTERN REDCEDAR	66	83	71	86	92	131	456	1,123	2,108
NOBLE FIR	8	16	39	31	41	68	385	872	1,460
MOUNTAIN HEMLOCK	23	27	38	48	51	53	241	551	1,032
GRAND FIR	32	46	35	85	68	53	175	114	609
SITKA SPRUCE	17	9	19	10	11	21	53	416	557
SUBALPINE FIR	22	31	32	23	30	5	37	16	196
WESTERN WHITE PINE	9	13	13	17	15	8	64	127	266
LODGEPOLE PINE	14	19	11	20	17	8	6	--	95
PONDEROSA PINE	1	4	6	2	1	6	34	96	150
ENGELMANN SPRUCE	5	3	3	14	14	19	41	19	118
WESTERN LARCH	2	--	--	--	2	--	36	16	56
ALASKA-CEDAR	2	3	1	--	3	2	4	15	30
WHITE FIR	--	--	3	--	2	6	12	--	23
TOTAL	2,172	3,099	4,056	4,823	4,998	4,615	15,357	21,290	60,411
)DS:									
'DER	--	1,048	854	756	488	182	279	12	3,620
MAPLE	--	122	205	136	81	88	191	88	910
WOOD	--	11	7	9	33	48	150	68	324
	--	5	26	15	30	13	16	--	105
AK	--	--	--	--	--	4	--	--	4
	--	2	--	--	--	--	--	--	2
	--	1,187	1,092	915	631	336	635	168	4,965
	2,172	4,286	5,148	5,739	5,629	4,951	15,992	21,458	65,376

y be off because of rounding.

TABLE 16—NET ANNUAL GROWTH OF GROWING STOCK AND SAWTIMBER ON TIMBERLAND BY OWNERSHIP CLASS AND BY SOFTWOODS AND HARDWOODS, SOUTHWEST WASHINGTON, 1978[1/]

OWNERSHIP CLASS	AVERAGE VOLUME	SOFTWOODS	HARDWOODS	ALL SPECIES
	CUBIC METERS PER HECTARE	THOUSAND CUBIC METERS		
GROWING STOCK:				
NATIONAL FOREST	4	1 559	14	1 573
OTHER PUBLIC	12	1 795	311	2 106
FOREST INDUSTRY	10	5 456	812	6 268
OTHER PRIVATE	9	1 668	751	2 419
ALL OWNERSHIPS	8	10 479	1 888	12 367
	CUBIC FEET PER ACRE	THOUSAND CUBIC FEET		
GROWING STOCK:				
NATIONAL FOREST	51	55,100	500	55,600
OTHER PUBLIC	174	63,445	10,977	74,421
FOREST INDUSTRY	148	192,794	28,701	221,496
OTHER PRIVATE	132	58,940	26,539	85,478
ALL OWNERSHIPS	120	370,278	66,717	436,995
	BOARD FEET PER ACRE	THOUSAND BOARD FEET		
SAWTIMBER (INTERNATIONAL 1/4-INCH RULE):				
NATIONAL FOREST	344	369,800	1,700	371,500
OTHER PUBLIC	908	339,680	48,003	387,683
FOREST INDUSTRY	798	1,052,429	141,059	1,193,489
OTHER PRIVATE	698	369,009	83,536	452,546
ALL OWNERSHIPS	659	2,130,919	274,298	2,405,217

1/Totals may be off because of rounding.

TABLE 17—NET ANNUAL GROWTH OF GROWING STOCK ON TIMBERLAND BY SPECIES AND OWNERSHIP CLASS, SOUTHWEST WASHINGTON, 1978[1]

SPECIES	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			THOUSAND CUBIC FEET		
SOFTWOODS:					
DOUGLAS-FIR	31,900	38,160	98,747	39,261	208,068
WESTERN HEMLOCK	4,806	22,750	80,122	12,192	119,870
PACIFIC SILVER FIR	10,965	--	3,114	1,156	15,235
WESTERN REDCEDAR	1,430	1,248	5,257	4,090	12,024
NOBLE FIR	1,050	193	268	456	1,968
MOUNTAIN HEMLOCK	594	--	68	--	662
GRAND FIR	2,025	489	1,176	1,129	4,819
SITKA SPRUCE	--	604	4,042	633	5,280
SUBALPINE FIR	990	--	--	--	990
WESTERN WHITE PINE	200	--	--	23	223
LODGEPOLE PINE	440	--	--	--	440
PONDEROSA PINE	400	--	--	--	400
ENGELMANN SPRUCE	264	--	--	--	264
ALASKA-CEDAR	66	--	--	--	66
WHITE FIR	2/-30	--	--	--	2/-30
TOTAL	55,100	63,445	192,794	58,940	370,278
HARDWOODS:					
RED ALDER	400	10,303	22,948	21,341	54,992
BIGLEAF MAPLE	105	674	3,387	3,685	7,851
BLACK COTTONWOOD	2/-14	--	2,286	861	3,132
OREGON ASH	--	--	79	640	720
OREGON WHITE OAK	--	--	--	12	12
QUAKING ASPEN	10	--	--	--	10
TOTAL	500	10,977	28,701	26,539	66,717
ALL SPECIES	55,600	74,421	221,496	85,478	436,995

1/Totals may be off because of rounding.

2/Negative net annual growth is the result of annual mortality exceeding gross annual growth.

TABLE 18—NET ANNUAL GROWTH OF SAWTIMBER ON TIMBERLAND BY SPECIES AND OWNERSHIP CLASS, SOUTHWEST WASHINGTON, 1978[1]

SPECIES	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			THOUSAND BOARD FEET, INTERNATIONAL 1/4-INCH RULE		
SOFTWOODS:					
DOUGLAS-FIR	219,300	224,201	556,016	253,053	1,254,569
WESTERN HEMLOCK	33,000	105,180	415,874	71,490	625,544
PACIFIC SILVER FIR	64,885	--	19,632	7,599	92,116
WESTERN REDCEDAR	8,816	7,216	27,830	23,930	67,792
NOBLE FIR	9,761	1,372	1,001	1,682	13,816
MOUNTAIN HEMLOCK	4,500	--	480	--	4,980
GRAND FIR	12,824	806	6,296	6,690	26,616
SITKA SPRUCE	--	905	23,300	4,401	28,606
SUBALPINE FIR	8,134	--	--	--	8,134
WESTERN WHITE PINE	400	--	--	166	566
LODGEPOLE PINE	4,560	--	--	--	4,560
PONDEROSA PINE	1,700	--	--	--	1,700
ENGELMANN SPRUCE	1,520	--	--	--	1,520
ALASKA-CEDAR	304	--	--	--	304
WHITE FIR	96	--	--	--	96
TOTAL	369,800	339,680	1,052,429	369,009	2,130,919
HARDWOODS:					
RED ALDER	1,122	44,219	116,090	59,240	220,670
BIGLEAF MAPLE	578	3,784	14,164	16,938	35,464
BLACK COTTONWOOD	2/-16	--	10,255	5,740	15,978
OREGON ASH	--	--	551	1,543	2,095
OREGON WHITE OAK	--	--	--	75	75
QUAKING ASPEN	17	--	--	--	17
TOTAL	1,700	48,003	141,059	83,536	274,298
ALL SPECIES	371,500	387,683	1,193,489	452,546	2,405,217

1/Totals may be off because of rounding.

2/Negative net annual growth is the result of annual mortality exceeding gross annual growth.

TABLE 19—AVERAGE ANNUAL MORTALITY OF GROWING STOCK ON TIMBERLAND BY SPECIES AND OWNERSHIP CLASS, SOUTHWEST WASHINGTON, 1978[1]

SPECIES	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			THOUSAND CUBIC FEET		
SOFTWOODS:					
DOUGLAS-FIR	11,725	1,544	3,133	1,094	17,496
WESTERN HEMLOCK	2,275	560	3,142	613	6,589
PACIFIC SILVER FIR	3,650	--	102	96	3,847
WESTERN REDCEDAR	500	51	272	203	1,026
NOBLE FIR	950	8	59	72	1,089
MOUNTAIN HEMLOCK	275	--	124	--	399
GRAND FIR	1,050	17	30	35	1,132
SITKA SPRUCE	--	8	179	30	217
SUBALPINE FIR	425	--	--	--	425
WESTERN WHITE PINE	3,400	--	--	4	3,404
LODGEPOLE PINE	650	--	--	--	650
WHITE FIR	100	--	--	--	100
TOTAL	25,000	2,188	7,041	2,147	36,376
HARDWOODS:					
RED ALDER	58	1,216	2,954	2,638	6,865
BIGLEAF MAPLE	--	99	599	410	1,108
BLACK COTTONWOOD	42	--	135	2	179
OREGON ASH	--	--	7	115	122
OREGON WHITE OAK	--	--	--	2/	2/
TOTAL	100	1,315	3,694	3,165	8,274
ALL SPECIES	25,100	3,503	10,735	5,312	44,650

1/ Totals may be off because of rounding.

2/ Less than 500 cubic feet.

TABLE 20—AVERAGE ANNUAL MORTALITY OF SAWTIMBER ON TIMBERLAND BY SPECIES AND OWNERSHIP CLASS, SOUTHWEST WASHINGTON, 1978[1]

SPECIES	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			THOUSAND BOARD FEET, INTERNATIONAL 1/4-INCH RULE		
SOFTWOODS:					
DOUGLAS-FIR	47,460	7,108	13,822	5,148	73,538
WESTERN HEMLOCK	11,187	2,416	16,529	3,431	33,563
PACIFIC SILVER FIR	18,080	--	530	591	19,201
WESTERN REDCEDAR	3,164	248	1,414	1,149	5,974
NOBLE FIR	6,780	50	361	447	7,638
MOUNTAIN HEMLOCK	1,017	--	815	--	1,832
GRAND FIR	4,407	72	143	197	4,818
SITKA SPRUCE	--	12	1,062	162	1,235
SUBALPINE FIR	1,469	--	--	--	1,469
WESTERN WHITE PINE	18,193	--	--	27	18,220
LODGEPOLE PINE	904	--	--	--	904
WHITE FIR	339	--	--	--	339
TOTAL	113,000	9,906	34,676	11,152	168,734
HARDWOODS:					
RED ALDER	--	2,097	6,206	2,744	1'
BIGLEAF MAPLE	--	181	777	831	
BLACK COTTONWOOD	263	--	139	13	
OREGON ASH	--	--	39	159	
OREGON WHITE OAK	--	--	--	2	
TOTAL	263	2,278	7,161	3,749	1
ALL SPECIES	113,263	12,184	41,836	14,901	18

1/ Totals may be off because of rounding.

TABLE 21—SOUTHWEST WASHINGTON TIMBER HARVEST BY OWNERSHIP CLASS, 1950-78

YEAR	NATIONAL FOREST			OTHER PUBLIC 1/			PRIVATE			ALL OWNERSHIPS		
	LIVE	DEAD 2/	TOTAL	LIVE	DEAD 2/	TOTAL	LIVE	DEAD 2/	TOTAL	LIVE	DEAD 2/	TOTAL
						THOUSAND BOARD FEET, SCRIBNER SCALE						
1950	3/	3/	147,000	--	--	--	3/	3/	1,555,167	3/	3/	1,702,167
1951	3/	3/	170,600	--	--	--	3/	3/	1,758,129	3/	3/	1,928,729
1952	134,243	24,757	159,000	--	--	--	1,152,313	71,410	1,223,723	1,286,556	96,167	1,382,723
1953	3/	3/	172,500	--	--	--	1,499,527	140,234	1,639,761	3/	3/	1,812,261
1954	149,600	45,600	195,200	--	--	--	1,151,478	115,172	1,266,650	1,301,078	160,772	1,461,850
1955	205,142	32,225	237,367	130,755	13,701	144,456	1,223,039	92,444	1,315,483	1,558,936	138,370	1,697,306
1956	227,100	25,800	252,900	195,548	3,717	199,265	1,399,138	69,498	1,468,636	1,821,786	99,015	1,920,801
1957	176,014	8,607	184,621	224,468	2,356	226,824	1,030,698	21,105	1,051,803	1,431,180	32,068	1,463,248
1958	258,649	16,067	274,716	188,291	2,997	191,288	961,357	16,189	977,546	1,408,297	35,253	1,443,550
1959	386,514	61,067	447,581	104,108	1,652	105,760	1,077,008	38,793	1,115,801	1,567,630	101,512	1,669,142
1960	322,538	61,982	384,520	101,751	2,213	103,964	1,083,976	28,828	1,112,804	1,508,265	93,023	1,601,288
1961	379,883	13,987	393,870	129,549	2,139	131,688	1,045,919	35,741	1,081,660	1,555,351	51,867	1,607,218
1962	439,400	41,200	480,600	97,232	2,769	100,001	1,346,358	22,105	1,368,463	1,882,990	66,074	1,949,064
1963	432,300	31,900	464,200	99,677	87,249	186,926	720,077	605,139	1,325,216	1,252,054	724,288	1,976,342
1964	388,590	79,010	467,600	150,012	90,898	240,910	1,032,540	556,389	1,588,929	1,571,142	726,297	2,297,439
1965	471,300	52,400	523,700	168,081	96,423	264,504	1,168,168	613,245	1,781,413	1,807,549	762,068	2,569,617
1966	515,085	10,600	525,685	145,389	44,284	189,673	1,385,337	203,502	1,588,839	2,045,811	258,386	2,304,197
1967	491,489	35,011	526,500	110,273	128	110,401	1,472,609	32,189	1,504,798	2,074,371	67,328	2,141,699
1968	608,143	39,529	647,672	175,238	970	176,208	1,910,983	944	1,911,927	2,694,364	41,443	2,735,807
1969	488,021	42,576	530,597	199,728	3,532	203,260	1,725,913	1,638	1,727,551	2,413,662	47,746	2,461,408
1970	439,501	36,858	476,359	141,571	936	142,507	1,869,923	751	1,870,674	2,450,995	38,545	2,489,540
1971	288,347	70,009	358,356	154,429	1,574	156,003	1,932,239	768	1,933,007	2,375,015	72,351	2,447,366
1972	334,194	68,870	403,064	242,662	1,170	243,832	1,850,094	651	1,850,745	2,426,950	70,691	2,497,641
1973	452,220	44,671	496,891	268,412	653	269,065	2,058,362	649	2,059,011	2,778,994	45,973	2,824,967
1974	371,314	20,282	391,596	105,383	6,434	111,817	1,824,945	1,785	1,826,730	2,301,642	28,501	2,330,143
1975	314,479	32,813	347,292	73,918	1,994	75,912	1,907,531	6,695	1,914,226	2,295,928	41,502	2,337,430
1976	296,515	24,377	320,892	143,272	1,766	145,038	2,142,751	7,238	2,149,989	2,582,538	33,381	2,615,919
1977	271,469	27,541	299,010	161,015	295	161,310	1,982,040	6,153	1,988,193	2,414,524	33,989	2,448,513
1978	300,822	62,512	363,334	184,598	956	185,554	1,961,194	5,922	1,967,116	2,446,614	69,390	2,516,004

1/Data for other public ownership are combined with private ownership for 1950-54.

2/Includes snags and down material before logging.

3/Data not available.

Source: 1950-76: Timber-harvest reports for Washington by year (published by Pacific Northwest Forest and Range Experiment Station); 1977-78: Timber-harvest reports, State of Washington, Department of Natural Resources.

Bassett, Patricia M., and Daniel D. Oswald.
1981. Timber Resource Statistics for Southwest Washington. USDA For. Serv. Resour. Bull. PNW-91, 24 p. Pacific Northwest Forest and Range Experiment Station, Portland, Oregon.

This report summarizes a 1978 timber-resource inventory of six counties in southwest Washington: Clark, Cowlitz, Lewis, Pacific, Skamania, and Wahkiakum. Detailed tables of forest area, timber volume, growth, mortality, and harvest are presented.

KEYWORDS: Forest surveys, statistics (forest), timber resources, resources (forest), southwest Washington, Washington (southwest).